EP 0 967 562 A2

FIG. 1

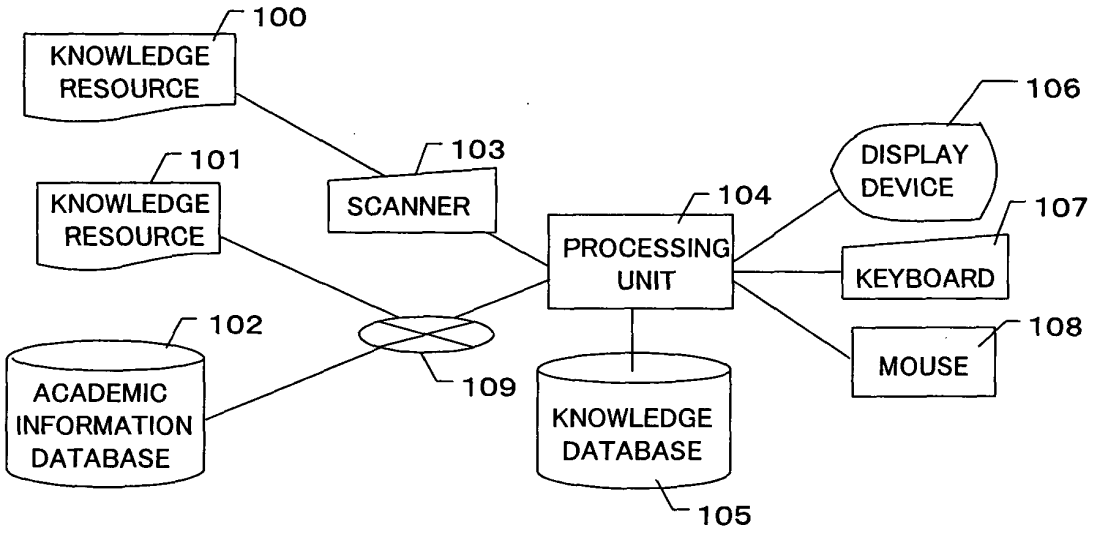


FIG. 2

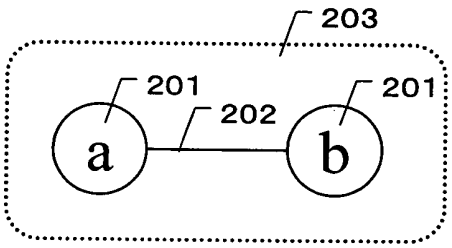

203
201
202
201
a
b

FIG. 3

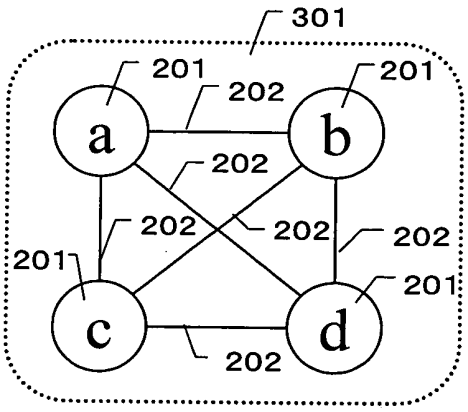
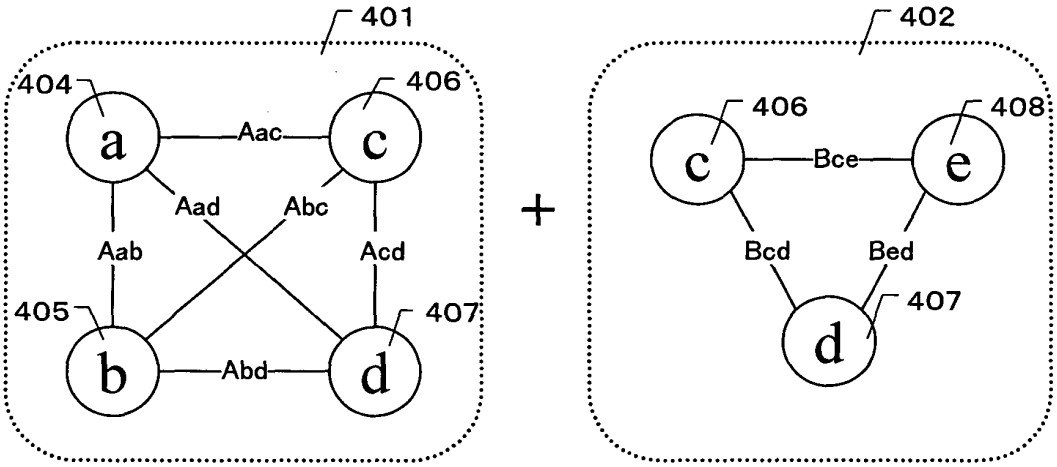
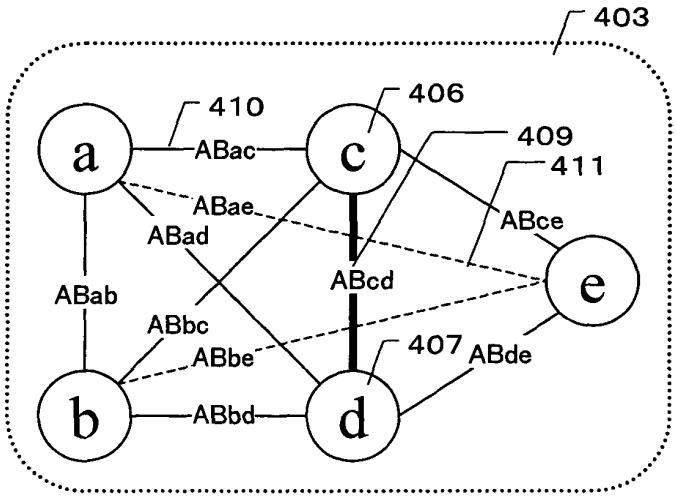

301
201
202
201
a
b
202
202
202
202
201
201
c
d
202

FIG. 4



KNOWLEDGE DATABASE A

KNOWLEDGE DATABASE B



KNOWLEDGE DATABASE AB

JP2007-249926A 2007.09.27

FIG. 5

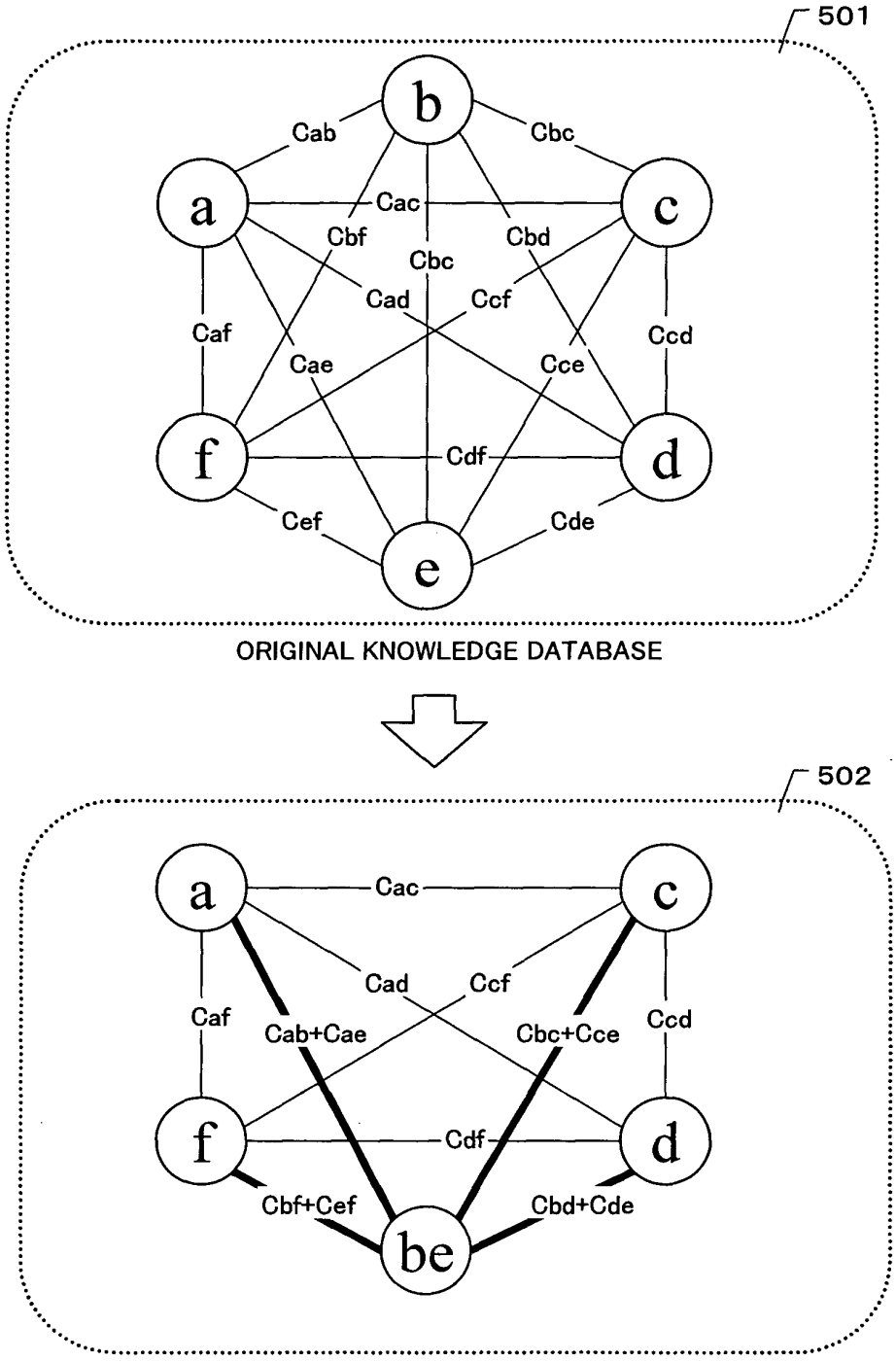


FIG. 6

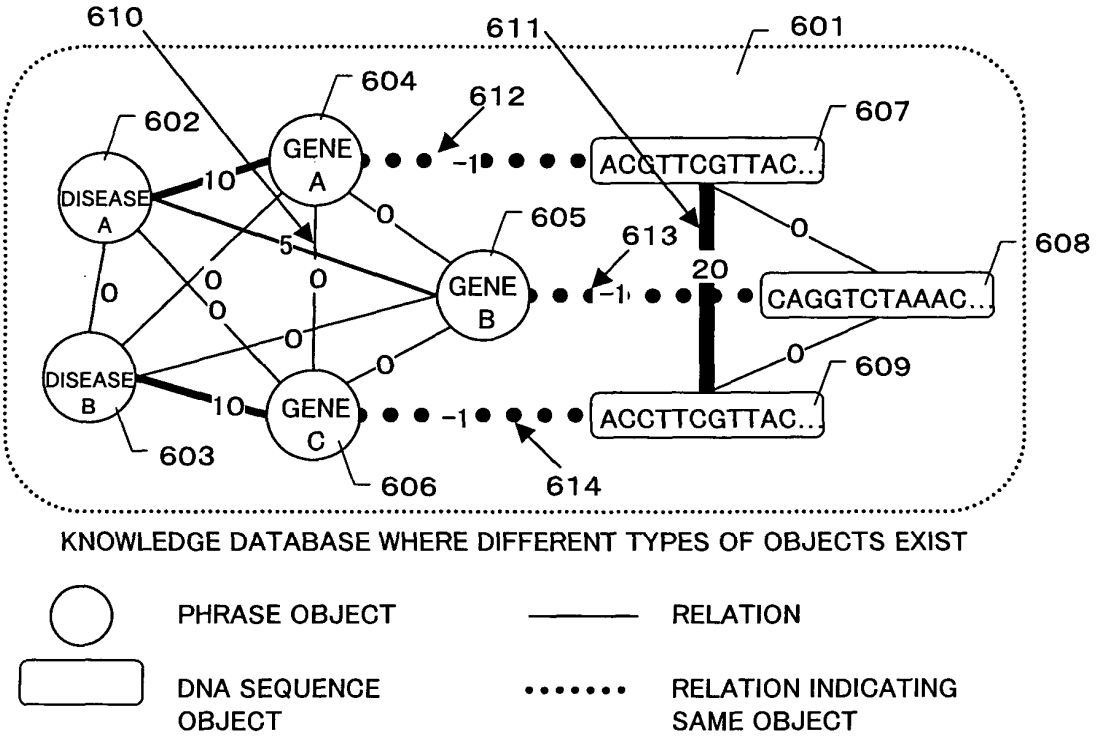

610
611
601
604
612
602
607
GENE A
DISEASE A
10
-1
ACGTTCGTTAC..
0
605
613
608
5
0
20
GENE B
-1
CAGGTCTAAAC..
0
0
0
0
0
0
609
DISEASE B
10
GENE C
-1
ACCTTCGTTAC..
603
606
614
KNOWLEDGE DATABASE WHERE DIFFERENT TYPES OF OBJECTS EXIST
PHRASE OBJECT
RELATION
DNA SEQUENCE OBJECT
RELATION INDICATING SAME OBJECT

FIG. 7

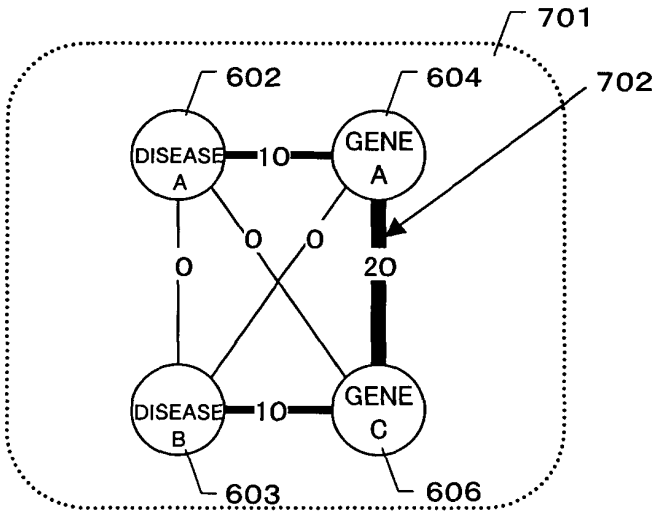
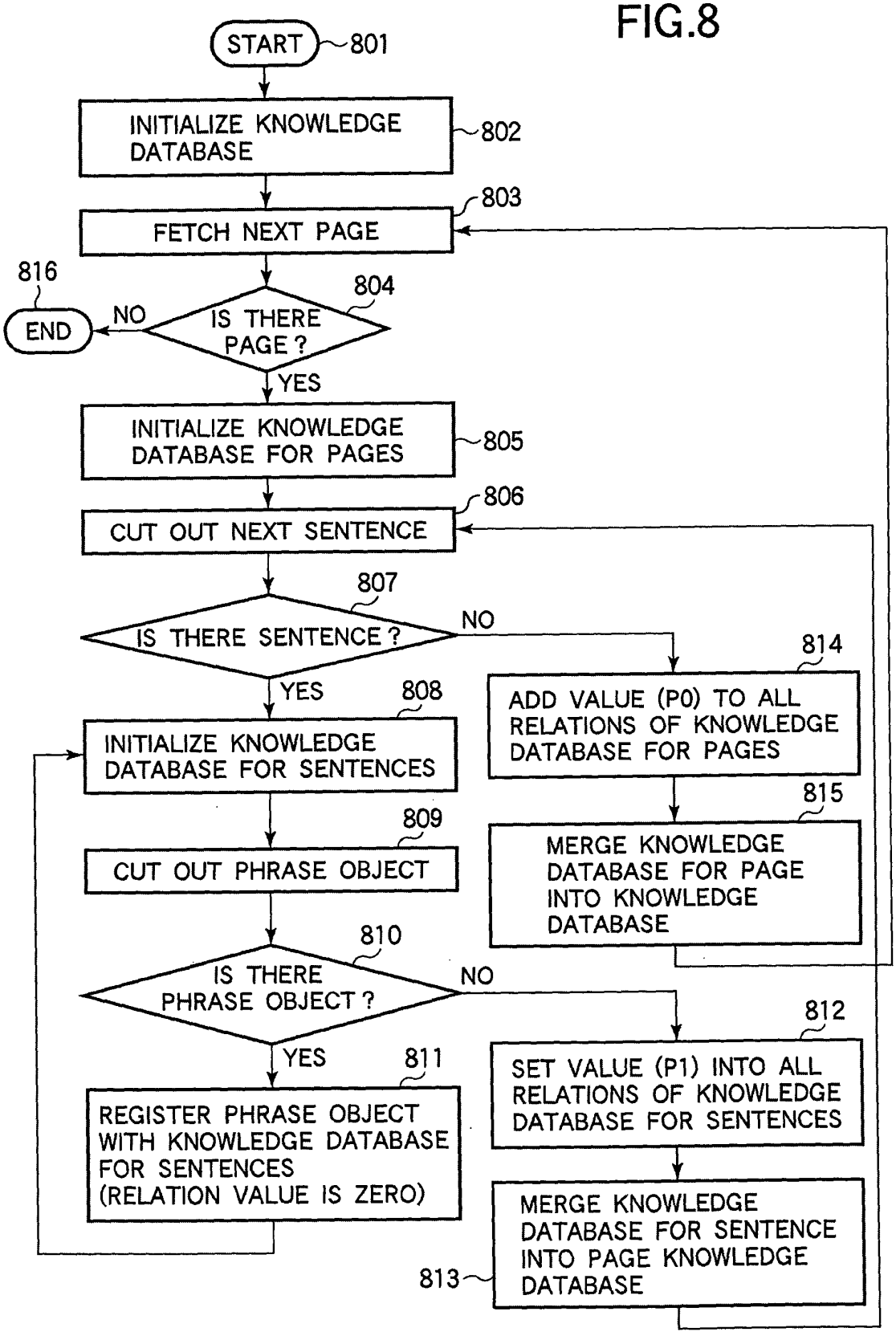

701
602
604
702
DISEASE A
10
GENE A
0
0
0
20
DISEASE B
10
GENE C
603
606

FIG.8



EP0762294A2

FIG.9

Sese J. Nikaidou H. Kawamoto S. Minesaki Y. Morishita S. Okubo K. Related Articles
BodyMap incorporated PCR-based expression profiling data and a gene ranking system.
Nucleic Acids Res. 2001 Jan 1:29(1):156-158.
[Record as supplied by publisher]
PMID: 11125076

Takenaka M. Imai E. Nagasawa Y. Matsuoka Y. Moriyama T. Kaneko T. Hori M. Kawamoto S. Okubo K. Related Articles
Gene expression profiles of the collecting duct in the mouse renal inner medulla.
Kidney Int. 2000 Jan:57(1):19-24.
PMID: 10620183: UI: 20087124

901

Kawamoto S. Ohnishi T. Kita H. Chisaka O. Okubo K. Related Articles
Expression profiling by iAFLP: A PCR-based method for genome-wide gene expression profiling.
Genome Res. 1999 Dec:9(12):1305-12.
PMID: 10613853: UI: 20082977

Hishiki T. Kawamoto S. Morishita S. Okubo K.
BodyMap: a human and mouse gene expression database. Related Articles
Nucleic Acids Res. 2000 Jan 1:28(1):136-8.
PMID: 10592203: UI: 20063237

902 903 904 903 904 903

Gene ex...

CUT OUT TITLE OF TREATISE

PHRASE	SEPARATION	PHRASE	SEPARATION	PHRASE
Gene expression profiles	of the	Collecting duct	in the	Mouse renal inner medulla

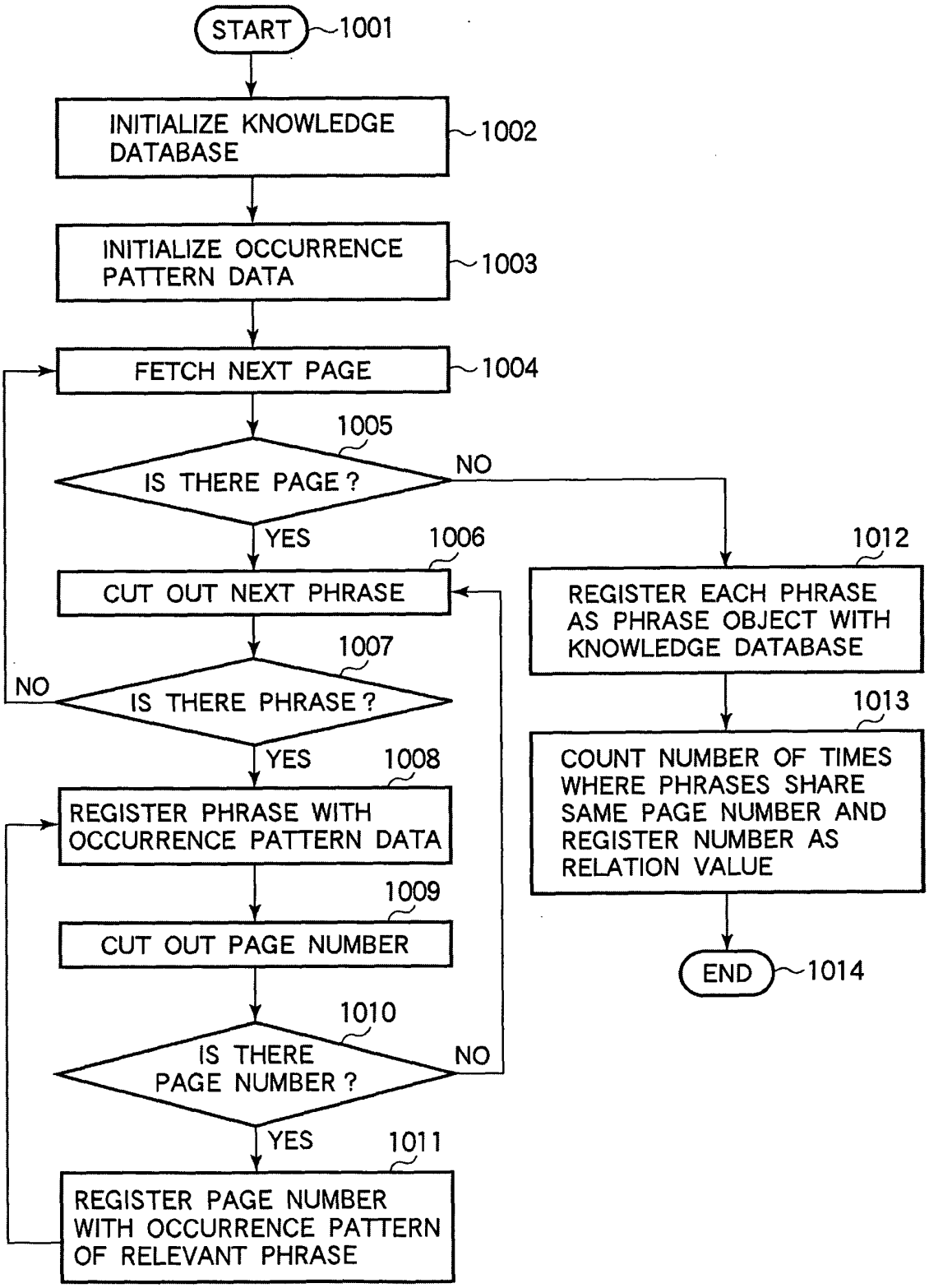
905 905 905

PHRASE OBJECT — 1 — PHRASE OBJECT — 1 — PHRASE OBJECT

906 906 906

1

FIG.10



1007/662-0234402

JP2006-085480

FIG.11

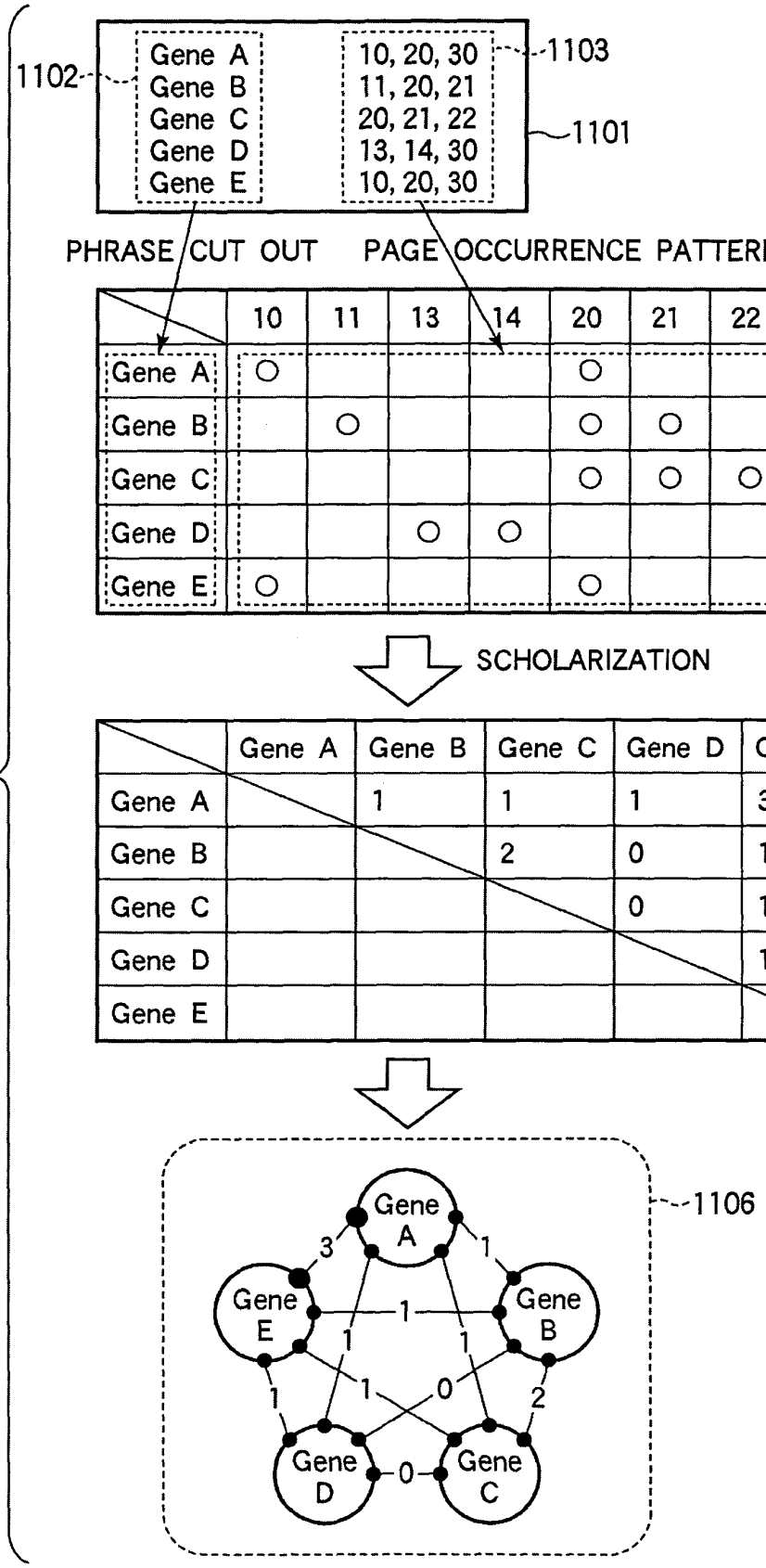


FIG.12

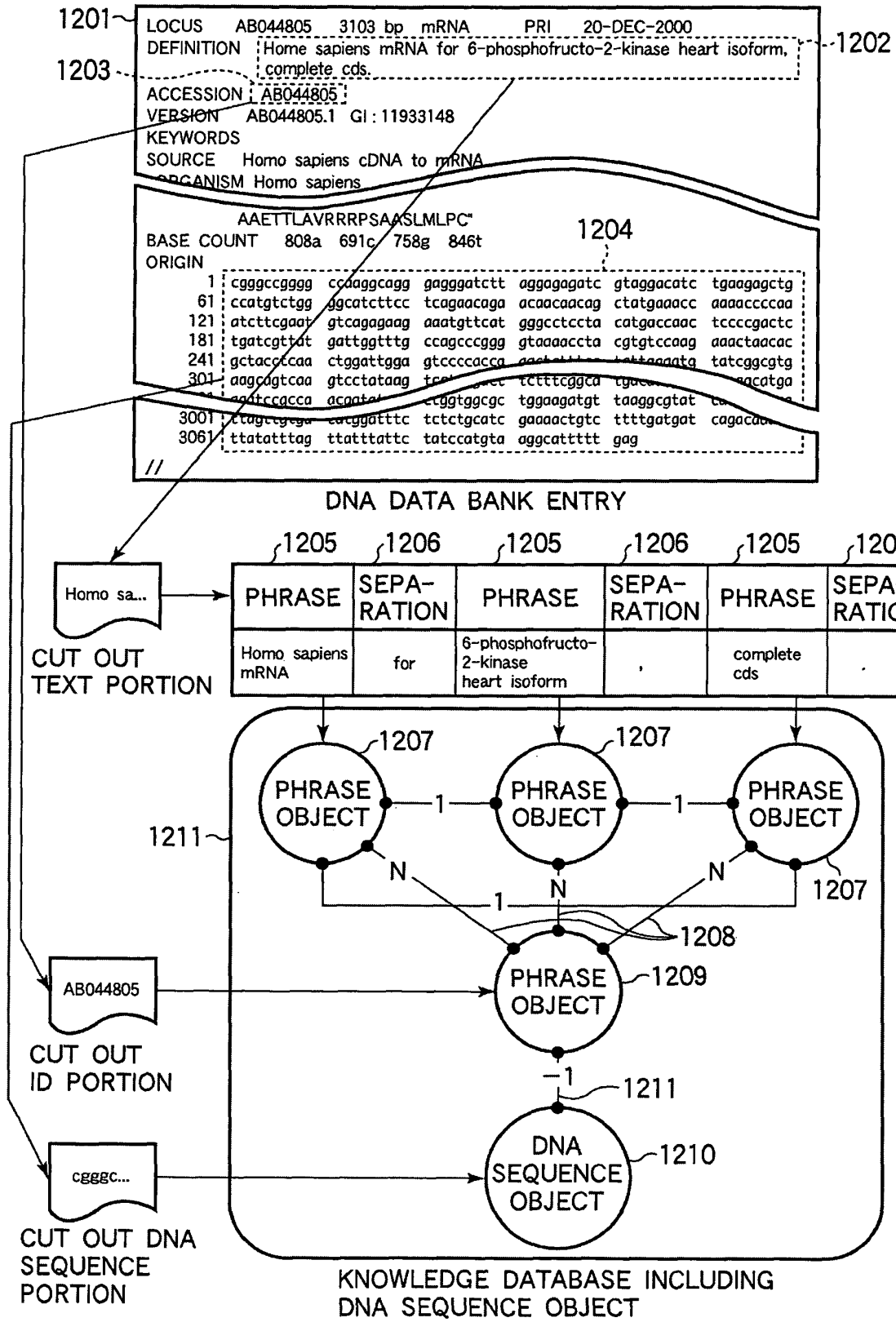

1201
LOCUS AB044805 3103 bp mRNA PRI 20-DEC-2000
DEFINITION Homo sapiens mRNA for 6-phosphofructo-2-kinase heart isoform, complete cds.
1202
1203
ACCESSION AB044805
VERSION AB044805.1 GI:11933148
KEYWORDS
SOURCE Homo sapiens cDNA to mRNA
ORGANISM Homo sapiens
AAETTLAVRRRPSAASLMLPC"
BASE COUNT 808a 691c 758g 846t
1204
ORIGIN
1 cgggccgggg ccaaggcagg gagggatctt aggagagatc gtaggacatc tgaagagctg
61 ccatgtctgg ggcatcttcc tcagaacaga acaacaacag ctatgaaacc aaaaccccaa
121 atcttcgaat gtcagagaag aaatgttcat gggcctccta catgaccaac tccccgactc
181 tgatcgttat gattggtttg ccagcccggg gtaaaaccta cgtgtccaag aaactaacac
241 gctacctcaa ctggattgga gtccccacca
301 aagcagtcaa gtcctataag
3001 ttagtcgcga catcggatttc tctctgcatc gaaaactgtc ttttgatgat cagacaa
3061 ttatatttag ttatttattc tatccatgta aggcattttt gag
//
DNA DATA BANK ENTRY
1205 1206 1205 1206 1205 1206
PHRASE
SEPA-RATION
PHRASE
SEPA-RATION
PHRASE
SEPA-RATION
Homo sa...
CUT OUT TEXT PORTION
Homo sapiens mRNA
for
6-phosphofructo-2-kinase heart isoform
,
complete cds
.
1207
1207
PHRASE OBJECT
PHRASE OBJECT
PHRASE OBJECT
1211
1
1
N
N
N
1
1207
1208
AB044805
CUT OUT ID PORTION
PHRASE OBJECT
1209
1
1211
cgggc...
CUT OUT DNA SEQUENCE PORTION
DNA SEQUENCE OBJECT
1210
KNOWLEDGE DATABASE INCLUDING DNA SEQUENCE OBJECT

FIG.13

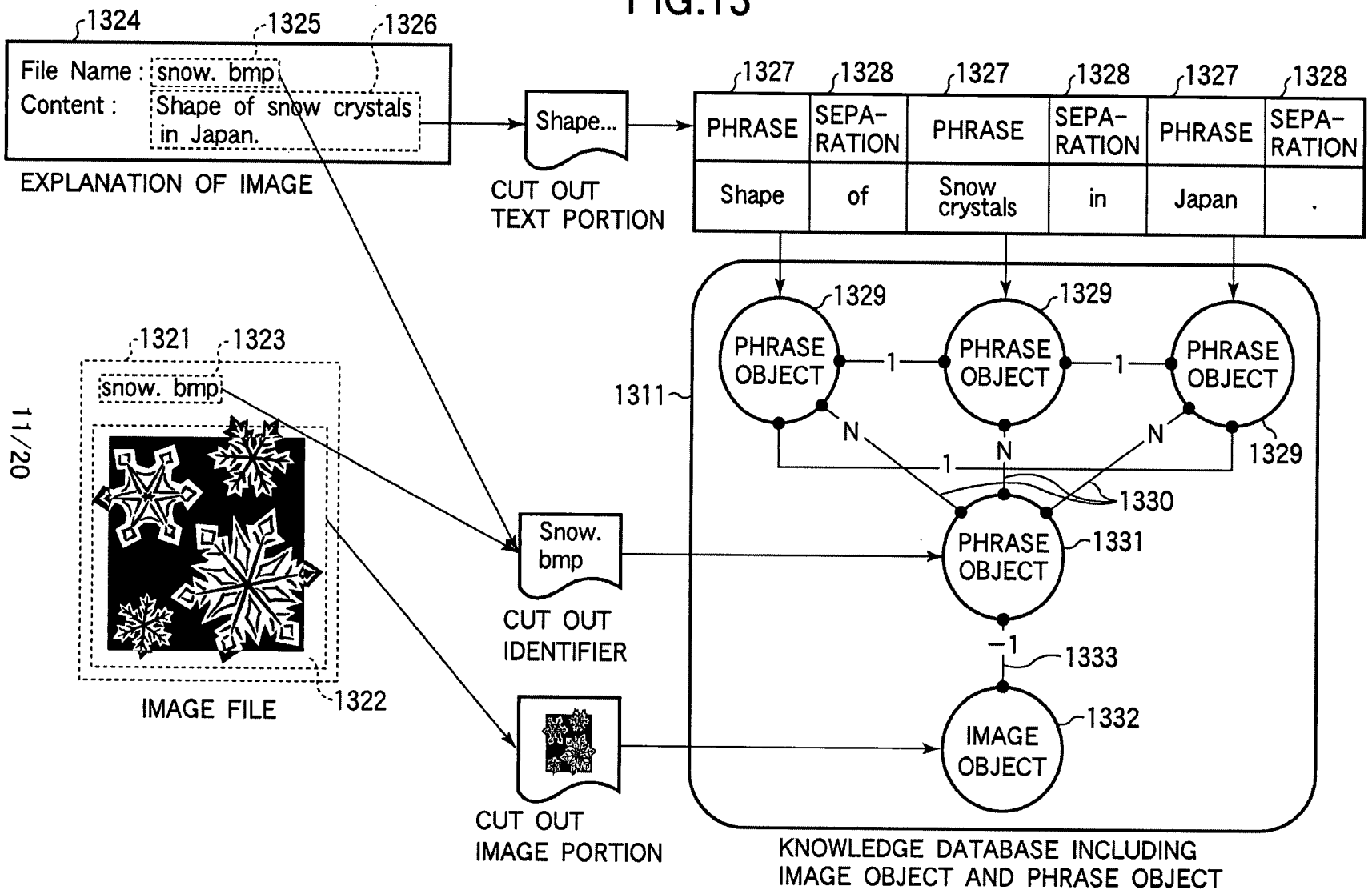
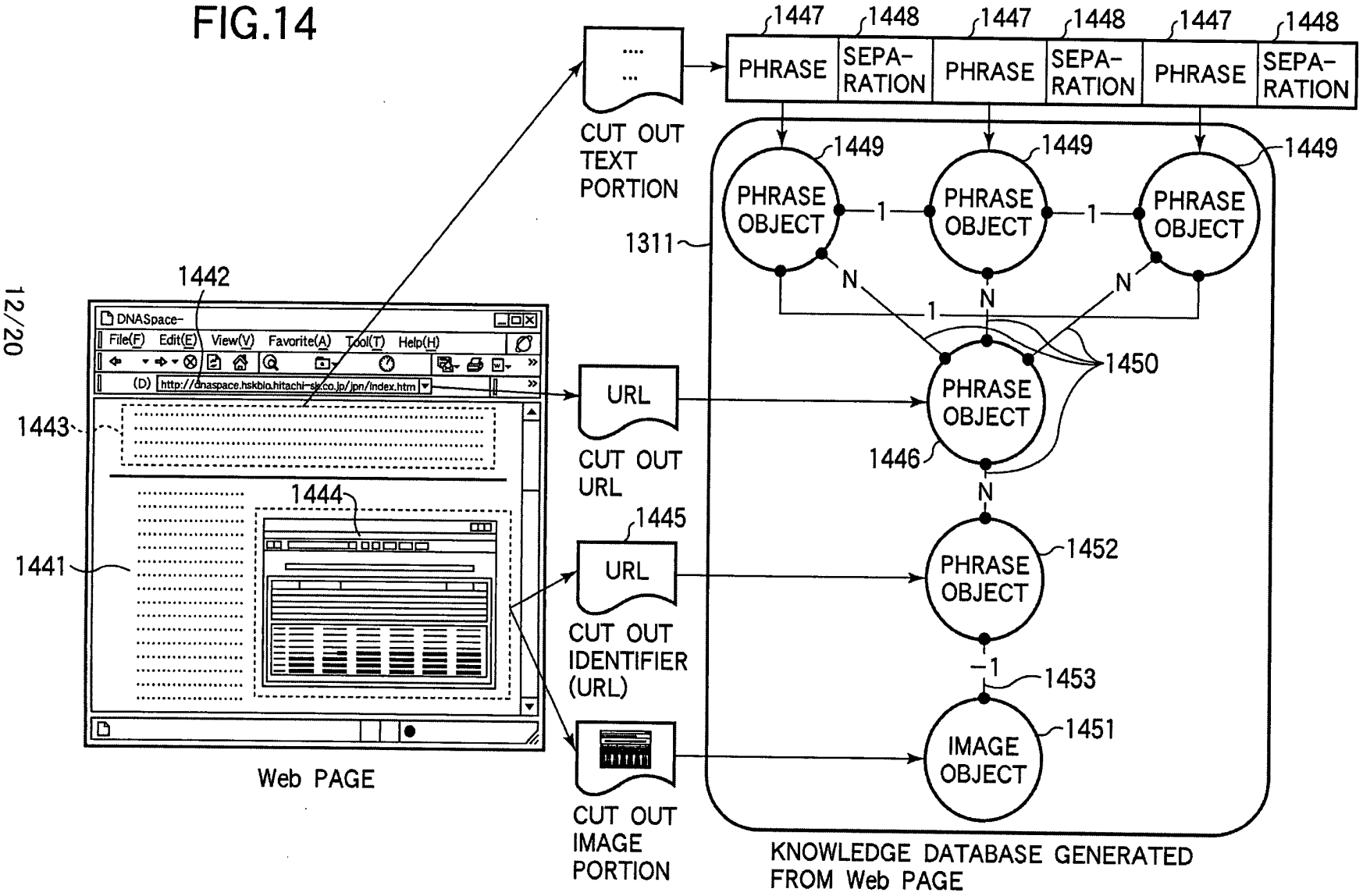
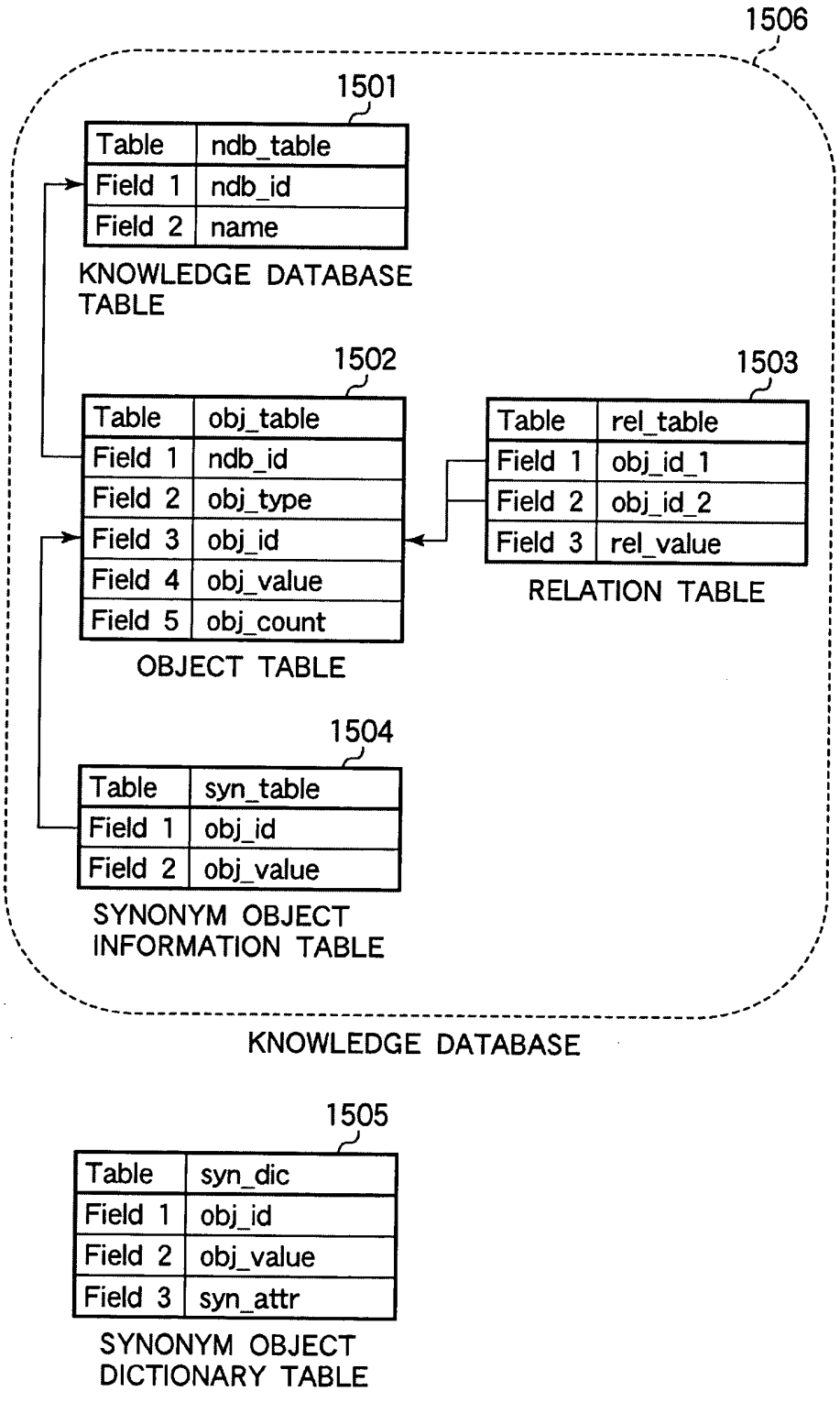

1324
1325
1326
File Name : snow. bmp
Content : Shape of snow crystals in Japan.
EXPLANATION OF IMAGE
Shape...
CUT OUT TEXT PORTION
1327
1328
PHRASE
SEPA-RATION
Shape
of
Snow crystals
in
Japan
.
1321
1323
snow. bmp
IMAGE FILE
1322
Snow. bmp
CUT OUT IDENTIFIER
CUT OUT IMAGE PORTION
1311
1329
PHRASE OBJECT
1
N
1330
1331
1333
IMAGE OBJECT
1332
KNOWLEDGE DATABASE INCLUDING IMAGE OBJECT AND PHRASE OBJECT

FIG.14


1447
1448
PHRASE
SEPA-RATION
1449
PHRASE OBJECT
1311
1
N
1450
1446
1452
1453
IMAGE OBJECT
1451
CUT OUT TEXT PORTION
CUT OUT URL
CUT OUT IDENTIFIER (URL)
CUT OUT IMAGE PORTION
1442
1443
1444
1445
1441
DNASpace-
File(F) Edit(E) View(V) Favorite(A) Tool(T) Help(H)
http://dnaspace.hskbio.hitachi-sk.co.jp/jpn/index.htm
URL
Web PAGE
KNOWLEDGE DATABASE GENERATED FROM Web PAGE

JP07-262202A

FIG.15



2004-229762 2004.08.19

FIG.16

1601

DATABASE NAME : SAMPLE NDB

1602

No	TYPE	VALUE	NUMBER OF OCCURRENCE TIMES
1	PHRASE	DISEASE A	15
2	PHRASE	DISEASE B	10
3	PHRASE	GENE A	10
4	PHRASE	GENE B	5
5	PHRASE	GENE C	10
6	DNA SEQUENCE	ACGTTCGTTAC...	-
7	DNA SEQUENCE	CAGGTCTAAAC...	-
8	DNA SEQUENCE	ACCTTCGTTAC...	-

OBJECT DATA

1603

No \ No	1	2	3	4	5	6	7	8
1		0	10	5	0	0	0	0
2			0	0	10	0	0	0
3				0	0	-1	0	0
4					0	0	-1	0
5						0	0	-1
6							1	20
7								1
8								

RELATION DATA

FIG.17

1701

ndb_id	NAME
{0701B3FE-775E-4BD0-A851-254397F47B98}	SAMPLE NDB

KNOWLEDGE DATABASE TABLE

1702

ndb_id	obj_id	obj_type	obj_value	obj_count
{0701B3FE-775E-4BD0-A851-254397F47B98}	{0701B3FE-775E-4BD1-A851-254397F47B98}	PHRASE	DISEASE A	15
{0701B3FE-775E-4BD0-A851-254397F47B98}	{0701B3FE-775E-4BD2-A851-254397F47B98}	PHRASE	DISEASE B	10
{0701B3FE-775E-4BD0-A851-254397F47B98}	{0701B3FE-775E-4BD3-A851-254397F47B98}	PHRASE	GENE A	10
{0701B3FE-775E-4BD0-A851-254397F47B98}	{0701B3FE-775E-4BD4-A851-254397F47B98}	PHRASE	GENE B	5
{0701B3FE-775E-4BD0-A851-254397F47B98}	{0701B3FE-775E-4BD5-A851-254397F47B98}	PHRASE	GENE C	10
{0701B3FE-775E-4BD0-A851-254397F47B98}	{0701B3FE-775E-4BD6-A851-254397F47B98}	DNA	ACGTTCGTTAC...	NULL
{0701B3FE-775E-4BD0-A851-254397F47B98}	{0701B3FE-775E-4BD7-A851-254397F47B98}	DNA	CAGGTCTAAAC...	NULL
{0701B3FE-775E-4BD0-A851-254397F47B98}	{0701B3FE-775E-4BD8-A851-254397F47B98}	DNA	ACCTTCGTTAC...	NULL

OBJECT TABLE

1703

ndb_id_1	obj_id_2	rel_value
{0701B3FE-775E-4BD1-A851-254397F47B98}	{0701B3FE-775E-4BD3-A851-254397F47B98}	10
{0701B3FE-775E-4BD1-A851-254397F47B98}	{0701B3FE-775E-4BD4-A851-254397F47B98}	10
{0701B3FE-775E-4BD2-A851-254397F47B98}	{0701B3FE-775E-4BD5-A851-254397F47B98}	10
{0701B3FE-775E-4BD3-A851-254397F47B98}	{0701B3FE-775E-4BD6-A851-254397F47B98}	−1
{0701B3FE-775E-4BD4-A851-254397F47B98}	{0701B3FE-775E-4BD7-A851-254397F47B98}	−1
{0701B3FE-775E-4BD5-A851-254397F47B98}	{0701B3FE-775E-4BD8-A851-254397F47B98}	−1
{0701B3FE-775E-4BD6-A851-254397F47B98}	{0701B3FE-775E-4BD7-A851-254397F47B98}	1
{0701B3FE-775E-4BD6-A851-254397F47B98}	{0701B3FE-775E-4BD8-A851-254397F47B98}	10
{0701B3FE-775E-4BD7-A851-254397F47B98}	{0701B3FE-775E-4BD8-A851-254397F47B98}	1

RELATION TABLE

FIG.18

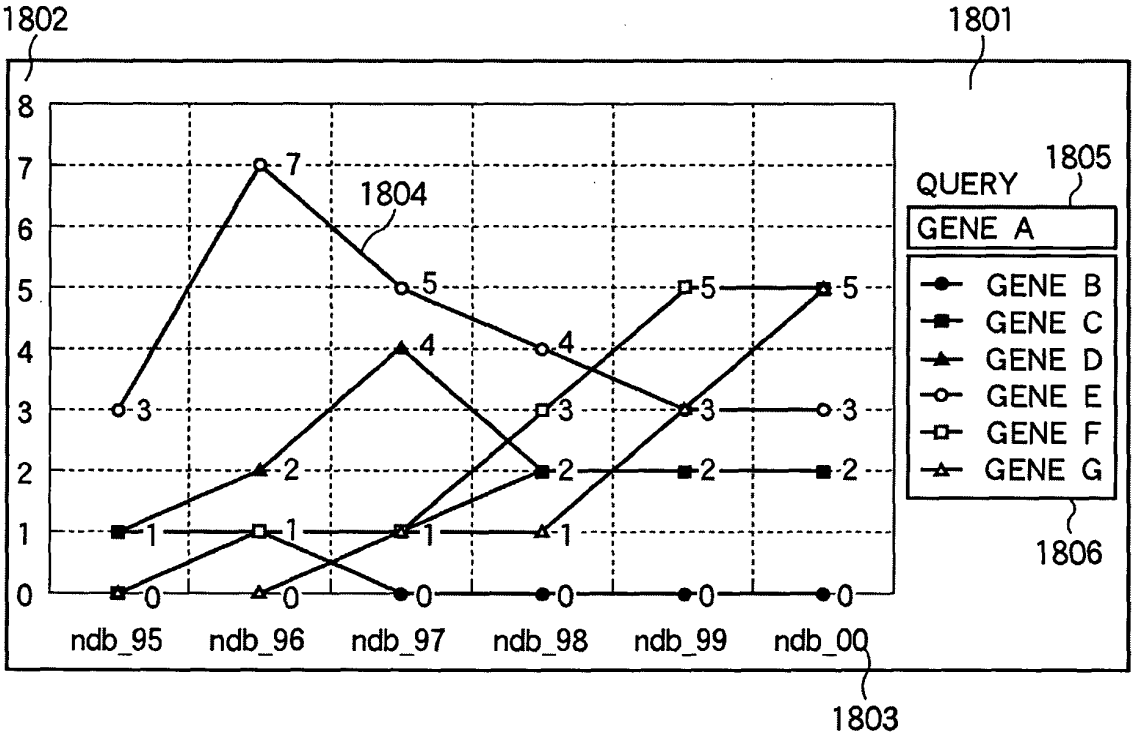

1802
1801
8
7
6
5
4
3
2
1
0
7
5
4
3
2
1
1
1
1
1
1
1
2
2
2
2
2
2
3
3
3
3
3
3
4
4
5
5
5
5
0
0
0
0
0
0
1804
ndb_95
ndb_96
ndb_97
ndb_98
ndb_99
ndb_00
1803
1805
QUERY
GENE A
GENE B
GENE C
GENE D
GENE E
GENE F
GENE G
1806

FIG. 19

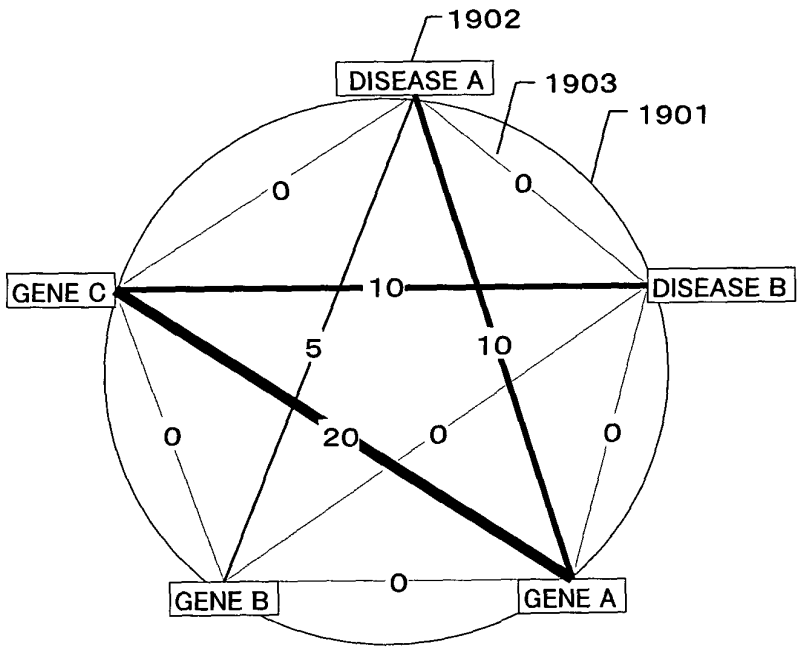

1902
DISEASE A
1903
1901
0
0
GENE C
10
DISEASE B
5
10
0
20
0
0
GENE B
0
GENE A

FIG.20

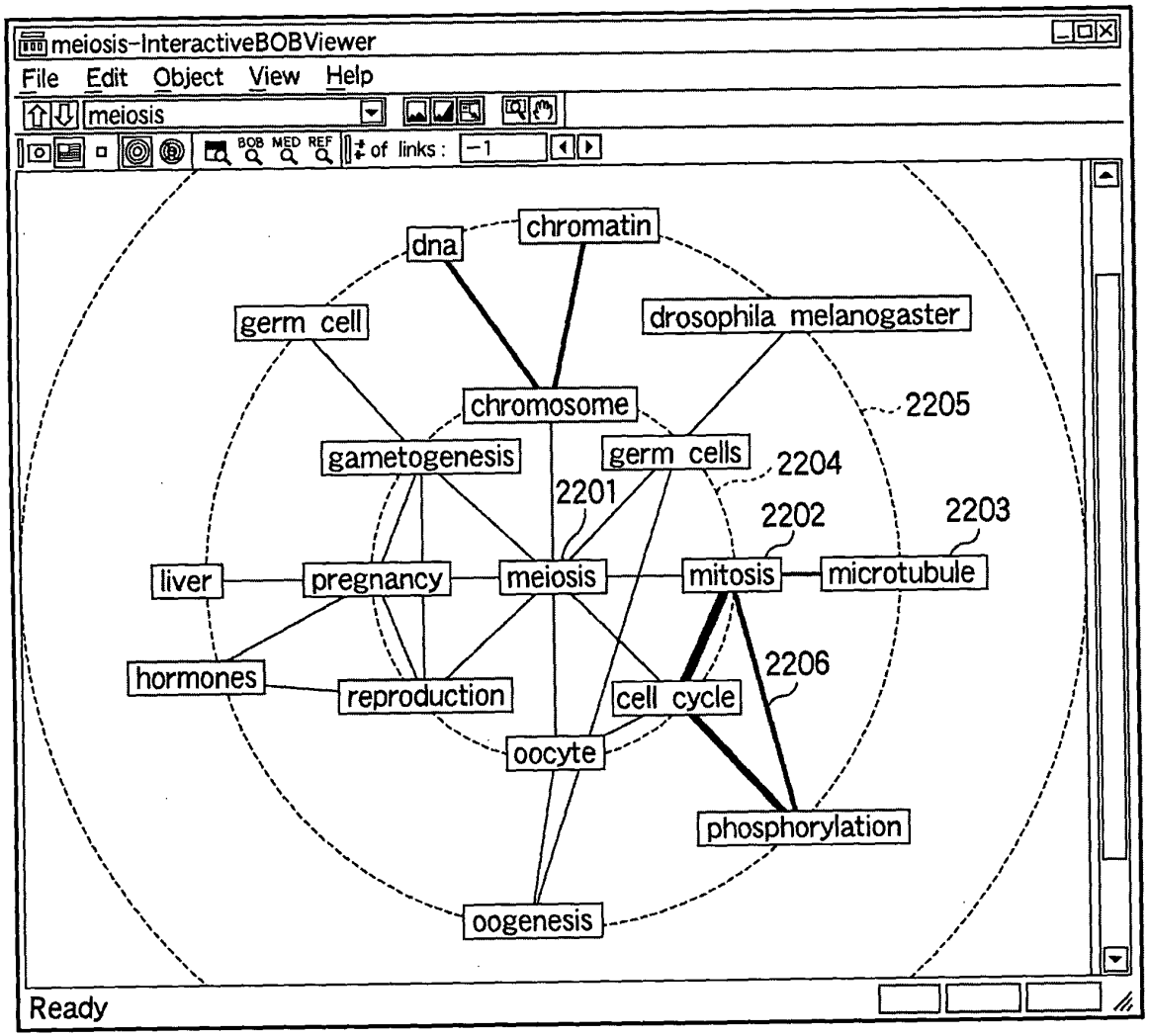

meiosis-InteractiveBOBViewer
File Edit Object View Help
meiosis
BOB MED REF
# of links : -1
dna
chromatin
germ cell
drosophila melanogaster
chromosome
2205
gametogenesis
germ cells
2204
2201
2202
2203
liver
pregnancy
meiosis
mitosis
microtubule
hormones
reproduction
cell cycle
2206
oocyte
phosphorylation
oogenesis
Ready

FIG.21

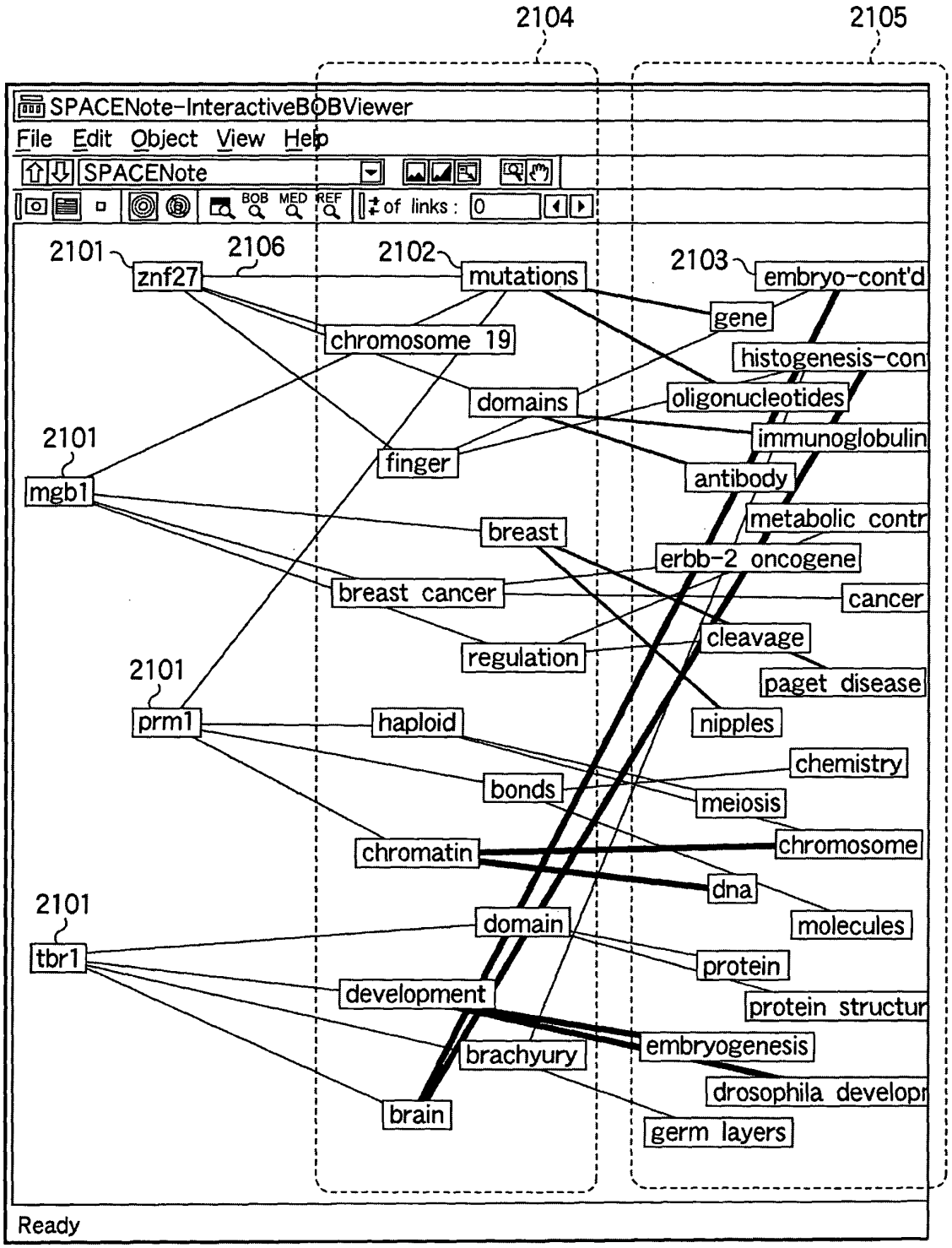
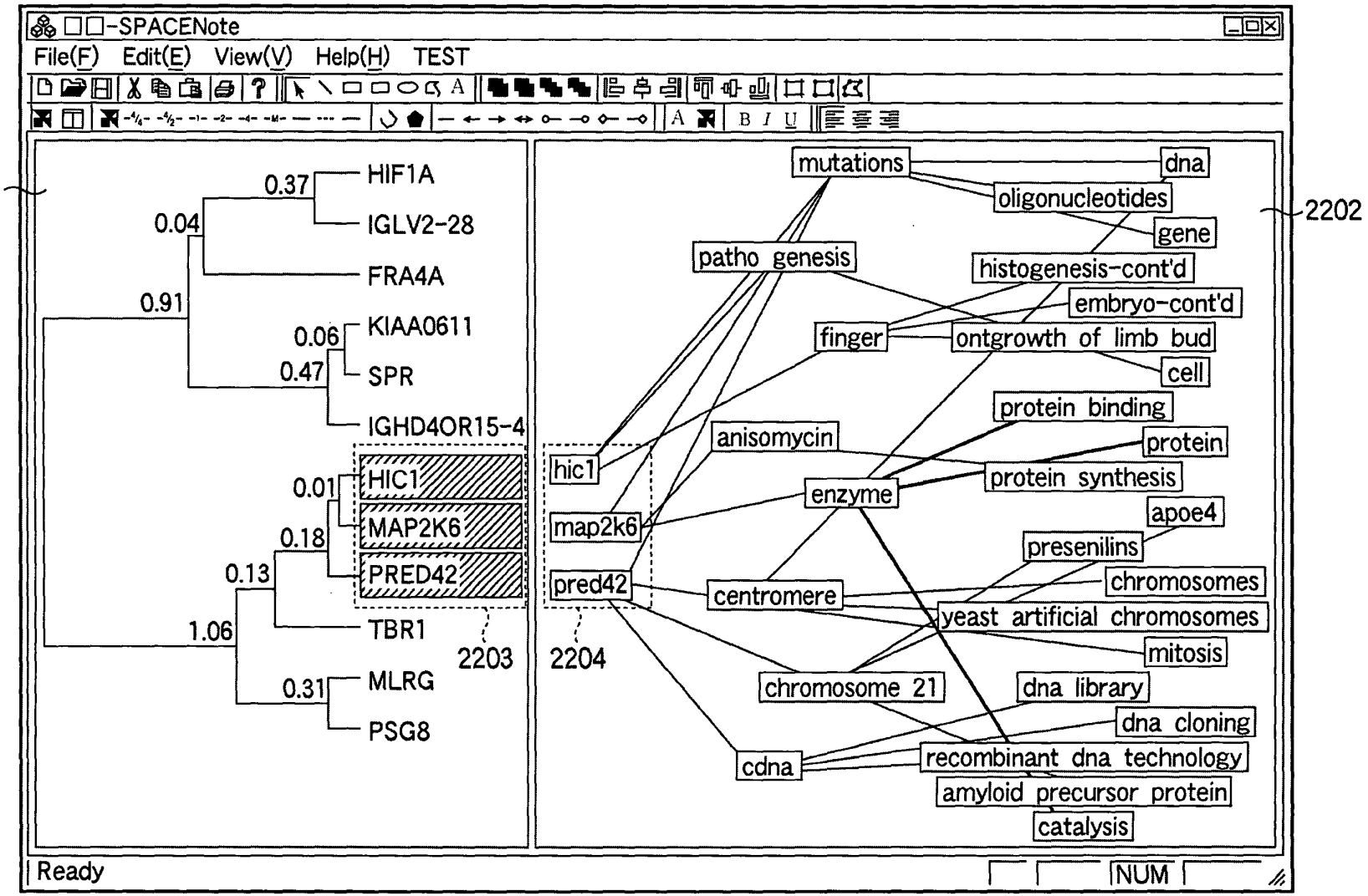

2104
2105
SPACENote-InteractiveBOBViewer
File Edit Object View Help
SPACENote
BOB MED REF
of links : 0
2101
znf27
2106
2102
mutations
2103
embryo-cont'd
gene
chromosome 19
histogenesis-con
domains
oligonucleotides
immunoglobulin
finger
antibody
mgb1
metabolic contr
breast
erbb-2 oncogene
breast cancer
cancer
cleavage
regulation
paget disease
prm1
haploid
nipples
chemistry
bonds
meiosis
chromosome
chromatin
dna
molecules
tbr1
domain
protein
development
protein structur
embryogenesis
brachyury
drosophila develop
brain
germ layers
Ready

FIG.22


-SPACENote
File(F) Edit(E) View(V) Help(H) TEST
2201
0.37
HIF1A
0.04
IGLV2-28
FRA4A
0.91
KIAA0611
0.06
SPR
0.47
IGHD4OR15-4
HIC1
0.01
MAP2K6
0.18
PRED42
0.13
TBR1
1.06
MLRG
0.31
PSG8
2203
2204
hic1
map2k6
pred42
mutations
dna
oligonucleotides
gene
2202
patho genesis
histogenesis-cont'd
embryo-cont'd
finger
ontgrowth of limb bud
cell
protein binding
anisomycin
protein
protein synthesis
enzyme
apoe4
presenilins
chromosomes
centromere
yeast artificial chromosomes
mitosis
chromosome 21
dna library
dna cloning
cdna
recombinant dna technology
amyloid precursor protein
catalysis
Ready
NUM